

Attachment 7

July 2015

Qualitative Study on Cigarettes and Smoking: Knowledge, Beliefs, and Misperceptions

Focus Group Summary Report

Prepared for

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3. FINDINGS

This section addresses key findings across four major topic areas:

- beliefs about the harms of smoking,
- general impressions about cigarette pack warnings,
- reactions to cigarette pack warning statements, and
- attitudes toward sources of warning messages.

For each major topic area, we identify and describe subtopic findings across the FGs. Although the study was not designed to identify group differences, findings were examined to identify differences, if any, among age groups (older adults and younger adults vs. adolescents) and tobacco user subgroups (adolescent smokers and susceptible groups). Some differences emerged between adults and adolescents, so, where appropriate, findings are discussed by age group. In those cases, references to “adults” pertain to both younger adult groups and older adult groups.

Key Findings

The purpose of this study was to gain a better understanding of knowledge, beliefs, and misperceptions about cigarettes and cigarette smoking. The findings from these FGs may be used to inform future studies and guide the development of FDA’s activities directed at the consumer.

Beliefs About the Harms of Smoking

- Participants mentioned numerous health effects of smoking, including lung cancer; heart disease or cardiovascular disease; throat cancer; gum disease; mouth or oral cancer; cancer (general); and lung disease, lung problems, or respiratory problems.
- Participants believed that the likelihood of experiencing health effects from smoking depends on how much or how often people smoke, how long they have smoked and whether they quit.
- In general, participants believed that health effects were more likely to happen to smokers compared with nonsmokers who are exposed to secondhand smoke.
- The conditions most often linked to exposure to secondhand smoke were lung disease, lung problems, and respiratory problems; asthma; heart disease; lung cancer; and birth defects or problems for the fetus.
- Other common concerns about smoking included the stigma associated with being a smoker and concerns about the effects of smoking on one’s appearance.

General Impressions About Cigarette Pack Warnings

- When asked for their thoughts about current cigarette pack warnings, participants said that they typically did not pay attention to the warning statements. They noted that this was because of the small size of the warning statements, the length of time the statements have been used, and the nonspecific nature of the wording.
- Many participants mentioned that the current warning statements are not as powerful as the smoking prevention ads on television, highlighting the graphic images of health effects from smoking.
- Participants also compared warning statements on cigarette packs in the United States with those in other countries and believed that the larger, graphic warnings would be more effective in dissuading people from smoking.
- A few participants said that the statements are best used for preventing youth from initiating smoking.
- Across all groups, the “Surgeon General” was one of the first things participants mentioned spontaneously when the topic of warnings on cigarette packs or ads was brought up. Participants usually identified the position as that of a government official, but most participants were unsure of the specific roles and responsibilities of the Surgeon General.

Reactions to Cigarette Pack Warning Statements

- Participants consider the statements that present new information to be the most attention-grabbing.

However, participants often questioned the believability of some of these novel statements.

- There was a widespread negative reaction to statements of the type "X causes Y" (e.g. "cigarettes cause," "smoking causes," "tobacco smoke causes," or "secondhand smoke causes" ... [specific disease / health effect])
- Participants expressed a desire for more information about the relationship between the amount and duration of smoking (or secondhand smoke exposure) to the health effects of smoking (or secondhand smoke exposure).
- Participants had positive reactions to aspects of statements that showed a mechanism of effect. They often stated that they wanted to know "how" smoking cigarettes or secondhand smoke was related to the health effect being presented.
- Participants were most receptive to statements relating to pregnancy and children and indicated that the statements would make them more mindful about smoking around children.
- Adolescents were more likely to believe the statements than adults.
- Some participants indicated that larger, graphic warnings would be more effective at getting their attention and would be more believable.

Attitudes Toward Sources of Warning Messages

- When asked who they thought these warning statements came from if they saw them on a cigarette pack, the entities that groups most often mentioned were "the government," the Surgeon General and the FDA.
- Participants in all segments mentioned doctors or other medical experts as a source from which the warning statements would be believable.

3.1 Beliefs About the Harms of Smoking

This section encompasses two subtopic areas:

- beliefs about health effects of smoking and
- beliefs about other harms of smoking.

3.1.1 Health Effects

Participants were asked what first came to mind when they thought of cigarettes, and, in particular, what concerns they had about cigarette smoking. The moderator recorded answers on a whiteboard as participants called out their concerns. The moderator probed for health effects of smoking in particular. Participants named the following health effects (in approximate order of frequency of mention):

- lung cancer
- heart disease or cardiovascular disease
- throat cancer
- gum disease
- mouth or oral cancer
- cancer (general)
- lung disease, lung problems, or respiratory problems
- emphysema
- blood pressure

- Appendix M: Attention-grabbing Worksheet Data—Adults
- Appendix N: Attention-grabbing Worksheet Data—Adolescents

The 26 statements are grouped by theme. The findings for each statement are preceded by information regarding the statement grouping (list) and the FG segments that viewed the statement.

3.3.1 Lung Disease

3.3.1.1 Cigarettes Cause Fatal Lung Disease

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult A ▪ Adolescent A 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent male susceptible; adolescent male smoker

Most participants, both adults and adolescents, understood the meaning of “lung disease” and “fatal.” Some participants mentioned “cancer.” Others described the lungs failing or described specific diseases, such as COPD.

- *“Your lungs fail and you can’t breathe.” (younger adult, Baltimore)*
- *“You’re going to die from smoking. Smoking kills.” (older adult, Memphis)*

Many of the adults did not find the statement believable. Their comments suggested that the primary reason they didn’t believe it was that it was too definitive.

- *“The minute you pick up a cigarette, you take that drag, you’ve got emphysema.” (younger adult, Portland)*

However, some adults did believe the statement. Some of those who believed it mentioned that they knew people who had experienced the effects.

Adolescents tended to believe the statement, although one adolescent pointed out that people who haven’t heard about the effects or seen them might not believe it. One adolescent also said that the threshold for risk should be stated.

- *“I guess like something I would, I would want to know is, like, if that can only happen if it was one cigarette or like how many cigarettes would it take, like the risk level?” (adolescent male susceptible, Baltimore)*

Participants, both adults and adolescents, said that they would find the statement more believable if the word “may” or “can” was inserted before the word “cause.”

- *“I think it’s believable, but like you said, ‘may cause fatal lung disease’ would probably be better.” (older adult, Baltimore)*

Most participants did believe that the statement applied to them; however, some young adults acknowledged that they did not think the threat was immediate.

- *"I think that since we're all young, we probably think it won't happen until we're older."* (younger adult, Baltimore)

Worksheet	Adult	Adolescent
New information	0.0%	0.0%
Top 3 attention-grabbing	15.8%	11.1%

3.3.1.2 Smoking Causes Death from Lung Diseases such as Emphysema and Chronic Bronchitis

Lists	Segments
▪ Adult A	▪ 2 older adult groups; 2 younger adult groups

Participants noted that the statement was very similar to the previous one.

- *"The same, just more specific as to why."* (younger adult, Baltimore)
- *"I think it's pretty much the same thing as the first one. It's just going into more detail."* (older adult, Memphis)

However, some participants appreciated that the examples were specific. Some participants said that the details make the statement more believable.

- *"It's almost, like, more believable because it has more words and a more descriptive element."* (younger adult, Portland)

Still, some participants thought the statement was too long.

- *"Right, yeah, it's, it's too long and it's, it's, it's all, it's all off, the emphysema and the chronic bronchitis should be first, I mean, if they wanted to be effective. It should be absolutely first and then description afterwards."* (younger adult, Portland)
- *"It's too lengthy for me. I wouldn't pay attention."* (older adult, Memphis)

Several participants pointed out that "bronchitis" is a common ailment that is not always caused by smoking cigarettes.

- *"I know somebody with bronchitis that was born with it. He didn't get it from smoking cigarettes." (older adult, Memphis)*

A few participants made similar statements regarding a friend or relative who had emphysema who had not smoked. One participant said he thought the statement was a "scare tactic."

Participants again recommended that the word "can" be inserted before "causes." Without the word "can," they interpret the statement as saying that 100% of smokers will get bronchitis or emphysema or that all bronchitis or emphysema is caused by smoking.

Several participants mentioned that "smoking" could refer to other substances and proposed the use of "cigarettes" instead.

Worksheet	Adult	Adolescent
New information	2.6%	—
Top 3 attention-grabbing	10.5%	—

3.3.1.3 Smoking Permanently Damages Your Airways and Lungs

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult A ▪ Adolescent A 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent male susceptible; adolescent male smoker

Many participants believed the statement, and some mentioned that they had experienced some lung damage or irritation. Some participants were in agreement that smoking can cause permanent damage.

- *"It means once you quit, you don't repair all the damage." (younger adult, Baltimore)*

However, the most common reaction to this statement was that it contradicted information participants have seen on commercials and in publications that discuss the benefits of quitting.

- *"Well, unless they say, I've read this several times, and they'll say it on commercials, they say if you stop smoking for 3 weeks that, or a year, whatever, there's a timeframe they give you that your lungs go back to normal. So this is, if what they said in the beginning was true, then this is a false statement." (older adult, Baltimore)*

- *"In my doctor's office, there's a chart and he has there, I don't know the numbers but it tells you, you know, 1 day, 1 week, 1 month, and 1 year as to what's healing in your body if you quit."* (older adult, Baltimore)

One adult participant recommended that the statement provide more information about how smoking permanently damages the airways and lungs, information about the timeframe, and information about the relationship between the amount and duration of smoking and the risk.

- *"If you smoke your entire life, you can permanently damage your airways and lungs, you know. If you smoke a pack of cigarettes once a month, you know, are you really permanently damaging your lungs, or when they say 'permanently damage,' how much damage are they talking about?...a little bit, you know, 1%, 2%, or are they talking about 50% or 75%?"* (older adult, Memphis)

Adolescents also had questions about how long it would take for smoking to damage the airways and lungs. They generally believed the statement but noted that if people smoke for a while but do not experience the damage, they may cease to pay attention to the statement.

Another recommendation provided was to add "if you don't quit smoking" to the statement or change the statement to say "smoking temporarily damages the airways and lungs."

- *"Yeah, I mean, I, I think, I think everyone here is aware that it does affect your lungs and your breathing, but people want to hear that if you do quit, like what can happen."* (younger adult, Portland)
- *"Yeah, positive examples."* (younger adult, Portland)

Worksheet	Adult	Adolescent
New information	7.9%	11.1%
Top 3 attention-grabbing	18.4%	38.9%

3.3.1.4 **Smoking Causes COPD, a Serious Lung Disease, and Permanently Scars Lung Tissue**

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult A ▪ Adolescent A 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent male susceptible; adolescent male smoker

One adult participant did not understand the word “scars” in this context. Some did not know the meaning of “COPD.” One adult participant mentioned that even if people do not know the acronym “COPD,” they can get a general understanding of what the statement is about. Most adolescents did not know the meaning of “COPD,” but understood it to be a serious lung disease and understood the rest of the statement. When asked if it applied to them, they said that it would depend on at what age they started smoking and for how long they smoked. Some participants said that the word “serious” was not needed because all lung disease is serious.

Similar to their reactions to previous statements, participants reacted negatively to the absence of the word “can” or “could” before “causes.” Because they believed other things could cause COPD, some participants said the statement was too general. As was the case with the previous statement, some participants questioned the use of the word “permanently.”

- *“I just don’t agree with the ‘permanently’ because I always understood, as well, that if you stop smoking at a certain age, if you catch it before it progresses to the fatal point or when you have cancer that it is irreversible, so I don’t really know if it’s true, but I thought if you stopped smoking at a certain age or at a certain point, you can reverse any damage that it does cause, and everything would be back as new, but if you have cancer and you’re so far gone at that point, it’s irreversible.” (older adult, Baltimore)*

One participant noted that the wording could make smokers defensive.

- *“I feel like this, this ‘permanently’ and all this like, I don’t know, negative connotation is, is only making smokers more likely to get defensive because people have smoking attached to their stress level, and when they read something stressful, it makes them want to smoke.” (younger adult, Portland)*

Participants suggested adding “can” or “may” to this statement before “causes” and before “permanently” as well.

Worksheet	Adult	Adolescent
New information	10.5%	22.2%
Top 3 attention-grabbing	15.8%	27.8%

3.3.2 Quitting Smoking

3.3.2.1 Quitting Smoking Now Greatly Reduces Serious Risks to your Health

Lists	Segments
<ul style="list-style-type: none"> Adult C Adolescent A 	<ul style="list-style-type: none"> 2 older adult groups; 2 younger adult groups Adolescent male susceptible; adolescent male smoker

Most adult and adolescent participants understood this warning statement.

- *"It would be in your best interest to stop smoking." (older adult, Memphis)*

Most adult and adolescent participants thought the statement was believable.

- *"And it's very believable. It does reduce the risk." (older adult, Portland)*
- *"I was going to say like this is just common sense. You just kind of already know this. I mean, like you, you know some of these other things, too, but like you already know that if you stop smoking now, clearly you're going to make your health better in the future. So I don't really feel like this needs to be put on a box." (younger adult, Baltimore)*

Some adult and adolescent participants noted that they thought there might be a point at which this statement might not be true because the "damage has already been done." Some participants brought up that if a person has been smoking for many years, quitting might not be that beneficial.

- *"Yeah, if you've been smoking for like 60 years, why would it now matter? Why would your health, health risks reduce?" (adolescent male susceptible, Baltimore)*

Worksheet	Adult	Adolescent
New information	5.3%	16.7%
Top 3 attention-grabbing	26.3%	11.1%

3.3.2.2 Quitting Smoking Now Reduces Risk of Dying from Cancer and Heart Disease

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult C ▪ Adolescent A 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent male susceptible; adolescent male smoker

Most adult and adolescent participants understood this warning statement and thought the statement was believable.

- *"I like this one just because it's talking about, again, it's talking about now but it's also talking about like the risk of your future, so it's not just talking about, you know, one or the other." (younger adult, Baltimore)*

Some participants thought that the "reduces risk" part of the statement was ambiguous.

- *"...but 'reduces the risk,' you know, how much of a reduction in the risk is there?" (older adult, Memphis)*
- *"The 'greatly reduces' in the last one and this one, it just says 'reduces,' so it's kind of ambiguous, again, the extent to which it reduces something, especially considering that the last one said 'serious risks,' which I'm sure include dying from cancer and heart disease. So it's like saying the same thing, but one is less than the other." (adolescent male susceptible, Baltimore)*

Some participants did not think this statement was believable because they believed that if someone has been smoking for many years, the damage has already been done.

- *"It's not believable because if you've been smoking for a long time then the risks are there. Even if you haven't been smoking for a long time, the risks are there because now like the lady who had the voice box or whatever, now when they play that commercial, they, after the commercial is done, like, they have the little deceased thing. I think she's dead now. So you're not just magically not going to die because you quit smoking. It's just you're probably not going to die as fast because the, the, the effects are still there, like your lungs are still like shriveled up. Your throat is still like horrible, so something's still inside your body. People don't get that." (adolescent male susceptible, Baltimore)*
- *"Well, you know, they say that when you quit, if the damage is done, it's done, you know. You can stop for 10 years and, you know, still have all the damage." (older adult, Memphis)*

Some participants pointed out that this statement might be more appropriate for or applicable to younger smokers.

- *"It sounds like this for people like 18 to 30 that's what I feel like it's for." (younger adult, Baltimore)*
- *"It might come across as more true for somebody younger just starting smoking than it would for somebody older who'd been smoking for a long period of time." (older adult, Memphis)*

Worksheet	Adult	Adolescent
New information	5.3%	27.8%
Top 3 attention-grabbing	26.3%	0.0%

3.3.3 Cancer

3.3.3.1 Cigarettes Cause Cancer

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult B ▪ Adolescent B 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent female susceptible; adolescent female smoker

Participants understood the statement. Some participants, both adults and adolescents, believed that it was too generic or too short. Several participants used the words "blatant" or "blanket" to describe the statement. One younger adult participant pointed out that the lack of caveats such as the amount or duration of smoking can make one suspicious of the entire statement. However, a few participants appreciated that it was "to the point."

Many participants thought the statement was not believable because it said "causes" and not "can cause" or "may cause." When reacting to the statement, participants commonly pointed out that some people smoke and do not get cancer.

- *"It's false. 'It may cause cancer' would be more, or 'may contribute to' would be more honest. Just blatantly saying that smoking a cigarette is going to give you cancer, period, end of sentence, is, you know, it's just not true." (older adult, Portland)*

Participants were generally comfortable with adding a "can cause" or "may cause" to the statement. One participant suggested the following:

- *"Cigarettes are associated with an increased chance of getting cancer."* (younger adult, Memphis)

Some adult participants thought that the statement would be effective in preventing initiation of smoking, but that it would not be effective in getting those who already smoke to quit.

- *"Maybe if I was young, 14 and 15, when we were starting smoking, they certainly didn't have anything like that on cigarettes."* (older adult, Portland)

Some adolescents mentioned that warnings such as this one are getting more common and therefore are not as effective as they used to be.

- *"I think if you're like thinking about this in terms of like an ad or a warning, it's not very effective in trying to scare people because we hear it all the time now."* (adolescent female susceptible, Portland)

Worksheet	Adult	Adolescent
New information	0.0%	4.8%
Top 3 attention-grabbing	12.9%	0.0%

3.3.3.2 Smoking Causes Many Forms of Cancer, such as Lung, Liver, Stomach, Oral, Cervical, Pancreatic, Kidney, Colorectal, Bone Marrow, Blood, and Bladder Cancer

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult B ▪ Adolescent B 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent female susceptible; adolescent female smoker

Participants generally understood the statement. One participant assumed it meant that smoking causes *all* forms of cancer. For adolescents, in particular, the link between smoking and some forms of cancer (e.g., bone marrow, blood, and bladder cancer) was new information. The term "colorectal" was not familiar to at least one adolescent.

Adolescent participants generally believed the statement. Adult participants had mixed opinions about whether the statement was believable. As with the other statements, many participants wanted to insert the word "may" before "causes." When presented with the option "smoking is a cause of...", they generally agreed that wording was better than "smoking causes." They also wanted statistics, evidence, or information on *how* smoking

causes these forms of cancer, as well as information about the relationship between the amount of smoking and the risks.

- *"I mean, most people believe it but there are some skeptics that, that needs the proof. If you want to say 'this will do something,' I want the proof. Now if you say 'it may do it,' okay, I understand the may part." (older adult, Baltimore)*
- *"I want to see the numbers of, it doesn't, it says it causes forms of cancer, but it doesn't tell you how much the person had smoked that had the cancer." (older adult, Baltimore)*
- *"I'm fine with the statement, like yes, it can cause cancer. Yes, it does increase your risk for this, but there's no clear indication of how it may go about causing you to get blood cancer or bone marrow cancer or any of these other things. It could, perhaps, add in like, you know, a little link to be able to look at the research that it has undergone to actually give this link between bone marrow cancer and actually smoking cigarettes. Then it'd probably be a lot better, and I'd actually see the connection much more clearly." (younger adult, Memphis)*
- *"I've seen proof of lung cancer, but I ain't never seen no proof of none of that." (older adult, Portland)*

Specifying multiple forms of cancer increased the perception of risk for at least one adult participant and one adolescent participant.

- *I think it shows that there's that many different types, so the possibility of getting one of them is higher, like versus this, smokers might just think, 'Oh, just lung cancer,' like, you know, that might in their mind be like the chance of getting one thing is lower than getting all of these different types of cancer." (younger adult, Portland)*
- *"I think this is much scarier. I mean, just because, than the previous one, because when you say, 'cancer,' it's like they said, it's a really broad term and it's like, 'Okay, whatever.' But when you hear this, it's like it can cause this and this and this and this and this and this, and it's like, 'Dang.'" (adolescent female susceptible, Portland)*

In one group, a few adult participants stated that the additional detailed information will get people's attention better than the more general statements. They also pointed out, however, that the type would have to be larger.

One participant also noted that the placement of the statement on a cigarette pack increases believability because the companies would require evidence of the correlation between smoking and the outcomes.

- *"I would definitely believe that in the context because if this is actually on tobacco products, then you know that there must have been push back from the tobacco companies, so for it to be on there, like there has to be, there has to have been lots of studies that have been multiply replicated and proven to be true or at least, you know, some sort of like significant correlation between smoking and these things."* (younger adult, Portland)

Some adult participants stated that graphic images would make the statement more believable.

- *"Seeing something like that ain't going to put no fear in you. You got to visibly see what's happening inside that body to scare you to stop and quit smoking."* (older adult, Portland)

Some participants also had doubts about the likelihood of smoking causing cancer in organs besides the lungs. For example, one adult didn't understand how smoking could cause bladder cancer.

- *"Because the bladder is down there and I'm smoking up here."* (younger adult, Memphis)

One participant pointed out that, to distinguish smoking tobacco from smoking other substances, the statement should specify "cigarettes."

Participants in one group also noted that participants would be more open to looking for this information and paying attention to it when they are ready to quit.

Worksheet	Adult	Adolescent
New information	58.1%	76.2%
Top 3 attention-grabbing	67.7%	52.4%

3.3.3.3 Smoking Causes Bladder Cancer, Which Can Lead to Painful and Frequent Urination

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult B ▪ Adolescent B 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent female susceptible; adolescent female smoker

Most adult participants did not believe the statement. As was the case regarding other statements, participants stated that the wording implied that smoking *definitely* causes bladder cancer, which made the statement less believable. Also, many adult participants associated bladder cancer with drinking too much alcohol or associated it with other types of liquids, and therefore had a difficult time making a link between smoking and bladder cancer.

- *"Now if it said 'smoking causes more, causes you to drink more alcohol, which will lead to painful and frequent urination,' that's truthful." (older adult, Baltimore)*
- *"I don't see this as believable in my eyes for the simple fact, smoking causes bladder cancer. Bladder is normally from drinking, I mean, food and drink and that's just me rationalizing in my head, that's what would make me not believe this from, from the jump and it, it's frequent urination, painful urination, smoking is inhaling, so from me inhaling, where would I have, what would, what would build up my bladder?" (older adult, Baltimore)*
- *"Again, there's no, there's no clear indication or explanation of how there is a link between smoking cigarettes and getting bladder cancer." (younger adult, Memphis)*

Some adults were confused about the difference between "bladder cancer" and "bladder infections." One participant noted that bladder cancer does not appear to be prevalent. Another noted that the statement was less relevant to smoking than the others.

A few participants discussed the fact that the statement was direct, specific, and descriptive, which they thought would make it more attention-grabbing, especially if there were different statements on different cigarette packs. However, they also made comments indicating that the statement was lacking in additional information about some of the more severe consequences.

- *"I think it's helpful. I'm just wondering what else bladder cancer brings to the table. Like, you know, painful and frequent urination, you know, that's bad but I just feel like there's a little bit more, like if they were trying to make this really stick, if they were trying to make it like really, really stick, it would have to be a little bit more something else, rather than just painful and frequent urination. Like I know there's other consequences, like, yeah, it might eventually kill me, as well." (young adult, Portland)*

Adolescents were more likely than adults to believe the statement, particularly because they thought that cigarette companies would not put the statement on the packs unless they had to because it was true. They thought it was "random" (adolescent female smoker, Memphis) and "more specific" (adolescent female susceptible, Portland) than some of the other statements. The terms "painful" and "frequent urination" seemed to make more of an impression on the adolescents than on the adults.

- *"Yeah, it definitely like causes an impression because you're like, 'Oh, I don't want to be in pain.'"* (adolescent female susceptible, Portland)
 - *[reply] "Yeah, or peeing a lot." [Laughter]* (adolescent female susceptible, Portland)
- *"I think this would be even more effective because who hasn't had the 'I accidentally peed in class' trick, like [Laughter] it gets personal, no matter what you do, so."* (adolescent female susceptible, Portland)

Worksheet	Adult	Adolescent
New information	87.1%	81.0%
Top 3 attention-grabbing	54.8%	66.7%

3.3.4 Heart Disease and Stroke

3.3.4.1 Cigarettes Cause Strokes and Heart Disease

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult C ▪ Adolescent B 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent female susceptible; adolescent female smoker

Most participants understood this statement. Most participants also thought this statement was very believable.

- *"It's self-explanatory."* (younger adult, Baltimore)

Some participants in the adolescent female susceptible group stated that they "don't really associate [stroke and heart disease] directly with smoking." Another participant in the group noted:

- *"I never really thought of cigarettes causing strokes because it's always been so focused on lungs and throat."* (adolescent female susceptible, Memphis)

Some participants thought the statement is slightly misleading because it says "causes" and not "can cause" or "may cause". When probed, all participants who disliked the use of "cause" thought that the statement would be improved by changing the wording to "is a cause of."

- *"I'm about to go to medical school, so like, I mean, they teach you that health effects aren't directly related to one thing. It's not necessarily a cause. It's kind of, it would increase your risk of." (younger adult, Memphis)*
- *"I don't think that it, it causes, it causes every stroke and heart disease." (older adult, Memphis)*
- *"They should put 'can cause'...because it's not automatically going to cause a stroke or heart disease, but they can cause stroke and heart disease." (adolescent female smoker, Memphis)*

Worksheet	Adult	Adolescent
New information	10.5%	14.3%
Top 3 attention-grabbing	13.2%	14.3%

3.3.4.2 Smoking Causes Heart Attacks and Strokes by Clogging Your Arteries

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult C ▪ Adolescent B 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent female susceptible; adolescent female smoker

Most participants understood this warning statement. Some participants noted that they liked this statement better than the previous statement because it explains how smoking causes heart attacks and strokes.

- *"I like that one, I think that one works better because it tells you like why it does those things." (younger adult, Baltimore)*
- *"It actually tells you how it, like that's relating what is actually happening." (adolescent female smoker, Memphis)*

However, some participants thought the statement wording was slightly misleading because they did not think that smoking clogs arteries.

- *"Smoking hardens your arteries. It doesn't clog them." (Older adult, Memphis)*
- *"It's a little deceiving because from what I've been, I've read, smoking doesn't really clog your arteries as much as it reduces the size of the arteries, making them easier to clog." (older adult, Memphis)*

- *"Yeah, I'm, the word 'clogging,' it's a little, it's, it's not quite accurate." (older adult, Portland)*
- *"Using that statement, it's misleading because what happens is the arteries constrict from the nicotine and, I don't, I don't know that they actually get clogged by the nicotine, but they will constrict, and if you've got any cholesterol build up, like I do now, then as soon as that, the arteries constrict or they're constricted all the time because you constantly got the nicotine in your system. You keep replenishing it. So when you're, the, the arteries actually get constricted." (older adult, Portland)*

A few participants also noted that the statement should say "can cause" or "increases the risk of."

- *"I think, shouldn't it say 'it increases your risk' because people are going to think, well, say they have parents who smoke, they're going to think, 'Well, that didn't happen to them, so it's not going to happen to me.'" (adolescent female smoker, Memphis)"*

Worksheet	Adult	Adolescent
New information	26.3%	33.3%
Top 3 attention-grabbing	39.5%	9.5%

3.3.4.3 Smoking Causes Blood Vessels to Weaken, Causing Severe Bleeding and Death from Ruptured Blood Vessels

Lists	Segments
▪ Adult C	▪ 2 older adult groups; 2 younger adult groups

Most participants found this warning statement to be very believable. In a few groups, participants thought the statement was "a little intense." When asked what made the statement intense, one participant said:

- *"Just 'severe bleeding and death,' I mean, just, just saying that straight out." (Older adult, Portland)*

In a few groups, participants commented that this statement was "more wordy" than the other statements, although some participants did not find that problematic.

- *"But it, so it tells you exactly what the consequence is, right? So I, to me, it's wordy but I, it tells me what's about to happen and it has [more of] that sense of immediacy than some of the other ones to me." (younger adult, Baltimore)*

In one group, a few participants were confused by the statement because it seemed to be contradictory. One participant said, *"I just want to know how it reduces blood flow but it causes severe bleeding at the same time."* (older adult, Portland)

Worksheet	Adult	Adolescent
New information	63.2%	—
Top 3 attention-grabbing	55.3%	—

3.3.5 Pregnancy and Harm to Fetus

3.3.5.1 Smoking during Pregnancy Can Harm Your Baby

Lists	Segments
▪ Adult B	▪ 2 older adult groups; 2 younger adult groups

Most participants understood and liked this statement.

- *"I think that's just so self-explanatory and so like, I think it's factual, you know. There's no arguing about it."* (younger adult, Portland)
- *"This is the best one so far."* (older adult, Portland)

Most participants thought this statement was very believable and clear. For many participants, this statement was believable because it was similar to other statements that they had heard regarding pregnancy and risks to a child's health.

- *"Today, yeah, I mean, that's like they tell you not to drink, not to do drugs, strenuous exercise, there's different things. So, you know, I can, I can certainly understand that statement."* (older adult, Baltimore)
- *"[The baby] needs the nutrition from the mother and from the mother smoking, that's putting, bringing in toxins into her system and that's like when they tell a mother, do not drink while she's nursing because she's putting that to the child. If you're smoking, you can harm the baby..."* (older adult, Baltimore)

When asked about why the statement is believable for them, some participants also brought up social norms regarding pregnant women and smoking.

- *"I think that's kind of one of those things where it's like if anyone saw a woman noticeably pregnant and was smoking, it would like if I'm walking down the street and smoking, no one really says anything, but if you see a pregnant woman walking*

down the street smoking, someone will probably be like, 'You shouldn't be doing it.'" (younger adult, Memphis)

- *I've seen pregnant women smoking cigarettes, and it just, every time I see it, it's just like, I don't know, it bothers me a lot.*" (younger adult, Portland)

Some participants found the statement believable because they had personal experiences and had witnessed effects of smoking on children firsthand.

- *"Everything that I took [when I was pregnant], I was in the hospital seven times, it went straight to my daughter. So this is very believable for me."* (older adult, Portland)
- *"Like, I've seen people that smoked that had babies, and it's true."* (younger adult, Memphis)
- *"Underweight babies and babies taking longer to develop than the next one."* (older adult, Portland)

Some participants did not think this statement applied to males, but other participants thought it applied to everyone.

- *"The only way it might apply to me is if my wife was pregnant."* (older adult, Baltimore)
- *"It doesn't apply to a man."* (older adult, Portland)

Some participants noted that this statement was better than previous statements because the wording was "can" instead of "will."

- *"At least they did, they didn't say 'will hurt your baby'...they said 'can harm your baby.' So the wording's a little better."* (older adult, Baltimore)
- *"Yes, and they've also got the right word there; you got 'can.'"* (older adult, Portland)

Although many participants throughout the FGs took issue with some statements being too absolute, one participant disagreed:

- *"Everyone keeps bring that up about the, 'these are absolute statements.' I think it's implied that it is like 'may.' Like I, I don't read it as being like absolute."* (older adult, Baltimore)

Worksheet	Adult	Adolescent
New information	0.0%	—
Top 3 attention-grabbing	12.9%	—

3.3.5.2 **Smoking during Pregnancy Can Stunt Your Baby's Growth**

Lists	Segments
▪ Adult B	▪ 2 older adult groups; 2 younger adult groups

Most participants thought this statement was believable.

- *"Yeah, I mean, it's kind of like an understood thing." (younger adult, Memphis)*
- *"I mean, the last statement was the same way as, you know, 'smoking causes cancer,' it's just you've heard it a million times." (younger adult, Portland)*

Some participants talked about how they know there is existing evidence that this statement is true.

- *"Well, there's tons of stats out on low birth weight among women smokers." (older adult, Baltimore)*

Some participants took personal experiences into account when deciding whether they believed the statement. In some cases, participants had experienced this outcome firsthand, and they believed the statement. Some participants who had not experienced the outcome firsthand did not believe it.

- *"It's not believable to me because of my own family situation. My brother, my sister, and I were born not low birth weight, and my mother was a smoker." (older adult, Baltimore)*
- *"Well, I'm not going to get personal but one of my family members, his growth has been stunted. He was born premature. So I've seen a lot of things firsthand from smoking during pregnancy." (younger adult, Memphis)*
- *"I've seen it to be true, not in all situations but, you know, you know, I agree with it." (older adult, Portland)*

Some participants noted that this statement stood out from the rest because "babies are different."

- *"I just think when you bring babies into just about anything, it kind of like, it kind of sets everyone straight because like, like the one before, I mean, it's like you can do whatever you want to yourself but when you start harming someone else, and I know like secondhand smoke, but I guess pregnancy is kind of a whole 'nother situation."* (younger adult, Memphis)

Some participants noted that stunted growth was a theme or health issue they had heard related to smoking before, but in the context of smokers.

- *"Well, see, to me, many years ago, and I haven't heard it lately, they used to say, 'If you smoke, it's going to stunt your growth.'"* (older adult, Baltimore)
- *"I don't know about babies' growth, but I know that, because I started smoking at a young age, and they said that it stunts your growth."* (younger adult, Memphis)

In one group, participants thought that because this statement used the word 'can,' it was more acceptable and believable because it was a more accurate statement.

- *"It's the 'can' makes it acceptable to me because it doesn't happen to everyone, but it does happen to a high percentage of people."* (older adult, Portland)

Worksheet	Adult	Adolescent
New information	0.0%	—
Top 3 attention-grabbing	6.5%	—

3.3.5.3 Smoking during Pregnancy Can Lead to Deformities in Your Baby

Lists	Segments
▪ Adult B	▪ 2 older adult groups; 2 younger adult groups

Overall, participants understood this statement; however, some participants found it hard to believe that smoking could lead to deformities in babies. They mentioned that deformities were more associated with genetics, illegal drugs, or alcohol.

- *"I've just never heard of cigarettes just causing, just cigarettes causing deformities."* (younger adult, Memphis)
- *"Deformities generally happen from genetics."* (older adult, Portland)
- *"So I don't really buy that deformities are a direct cause to, to smoking, even if it says 'can' in this particular case."* (older adult, Portland)

- *"We think of, we associate drinking with deformities more than smoking." (younger adult, Portland)*

However, one group thought that using the word "deformities" made the statement seem more important.

- *"I mean, I think it can even go further but, you know, it's on the right, it's on the right path of just really stressing the importance of it, you know. When you start to throw words like 'deformities' in there...it's implying you're like taking away their rights, like it was like them being pregnant is like you're trapping them in a little jail..." (younger adult, Portland)*

Some participants used personal experiences to explain why they either believed or did not believe the statement.

- *"Yes, where her child has a hurt hip, to where one of his legs are longer than the other and he's missing, he has four fingers, no, three fingers and a thumb on one hand." (younger adult, Memphis)*
- *"This is a personal experience. I smoked while I was pregnant. I didn't know I was pregnant, but there's nothing wrong with my child." (younger adult, Memphis)*

One group also brought up that the statement seems to be targeted more to women than to men, but one participant thought it still applied to men.

- *"Definitely sounds like it's more targeted towards women, and so if you're a man looking at that, I think it'd be real easy to just go like, 'It doesn't apply to me.'" (younger adult, Portland)*
- *"I don't know if like I feel excluded from it, though, like it's still good to know for me as well...I mean guys also have that nurturing kind of feeling, especially if, you know, the baby is going to be yours." (younger adult, Portland)*

Some participants brought up that using the word "can" instead of a more absolute term made the statement more believable.

- *"Yea, it's not, it's not an absolute since it's not telling you that it will. It's letting you know that it can." (older adult, Baltimore)*
- *"If it said 'if you smoke during a pregnancy your baby will definitely be deformed,' then I wouldn't 100% agree with it." (younger adult, Memphis)*

Worksheet	Adult	Adolescent
New information	16.1%	—
Top 3 attention-grabbing	35.5%	—

3.3.6 Secondhand Effects on Children

3.3.6.1 Tobacco Smoke Can Harm Your Children

Lists	Segments
▪ Adult A	▪ 2 older adult groups; 2 younger adult groups

Most participants understood and generally believed this statement. Some participants qualified their belief by stating that it does not *necessarily* harm children, but it *can*, or that the harm depends on the intensity of the smoke.

- *"But it's, it, it, if you're outside on the, on the beach or whatever, I don't see where it's going to bother anybody."* (older adult, Baltimore)

Some participants believed that for this statement, the word "can" should be deleted.

- *"There should be no 'can' in this one."* (young adult, Portland)
 - *[reply] "Because their bodies, it's still growing."* (young adult, Portland)

One participant noted that smoke could cause asthma in children. Several participants said that the statement would make them more mindful about smoking around children, and that the statement applies to everyone, even those who do not have their own children.

- *"It applies to everybody, if you have a heart—everybody that has a child in their lives or in some way, shape, or form."* (young adult, Portland)
- *"It applies to everyone because there's kids everywhere."* (young adult, Portland)

Worksheet	Adult	Adolescent
New information	2.6%	—
Top 3 attention-grabbing	21.1%	—

3.3.6.2 Secondhand Smoke Causes Respiratory Illness in Children

Lists	Segments
▪ Adult A	▪ 2 older adult groups; 2 younger adult groups

Most participants understood and had positive reactions to this statement.

- *"I think, to me, that's a true statement. There are a lot of kids with asthma and, you know. I just can't determine where they're getting it from."* (older adults, Baltimore)
- *"That's a wonderful statement."* (younger adult, Portland)

One participant said that this statement would require proof. Some participants noted that, like many of the statements, it is "far too definitive" (older adult, Memphis). However, replacing "causes" with "is a cause of" satisfied one participant.

Comparisons were made with the statement, "Tobacco smoke can harm your children." One participant preferred "Secondhand smoke causes respiratory illness in children" because it was more specific.

Worksheet	Adult	Adolescent
New information	5.3%	—
Top 3 attention-grabbing	18.4%	—

3.3.6.3 Secondhand Smoke Causes Pneumonia and Other Lung Infections in Children

Lists	Segments
▪ Adult A	▪ 2 older adult groups; 2 younger adult groups

Participants did not indicate that they had trouble understanding this statement; however, many participants had not heard of the connection between secondhand smoke and pneumonia. Several participants stated that adding "can cause" or "may cause" would make the statement more believable. Several participants also mentioned their own experience as a child or as a parent who smoked, and noted that they or their children did not experience pneumonia or lung infections as a result of secondhand smoke; these participants were therefore less likely to pay attention to the statement.

One participant noted that the statements pertaining to children generally had a greater impact.

- *"I mean, if they just put anything that pretty much pertains to children, it might affect a little bit more better. I mean, I don't want to do that to my child."* (young adult, Portland)

Worksheet	Adult	Adolescent
New information	34.2%	—
Top 3 attention-grabbing	34.2%	—

3.3.7 Secondhand Effects in General

3.3.7.1 Tobacco Smoke Causes Fatal Lung Disease in Nonsmokers

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult C ▪ Adolescent A 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent male susceptible; adolescent male smoker

Participant reactions to this statement were mixed. Most participants understood the statement and thought it referred to secondhand smoke or smoking around nonsmokers.

- *"Don't expose others to your cigarette smoke."* (older adult, Memphis)
- *"You could be harming a person next to you who don't smoke."* (older adult, Memphis)

Some older adult and adolescent participants noted that the statement would be clearer if it specified that secondhand smoke is how nonsmokers are exposed to tobacco smoke.

- *"Also, I don't like how it doesn't mention the word 'secondhand smoke' at all."* (adolescent male susceptible, Baltimore)
- *"[You should add] 'secondhand smoke' because it, because you're thinking, 'How would a nonsmoker get a fatal lung disease?'"* (older adult, Portland)

Some participants did not believe the statement. Some participants noted that the word "fatal" made the statement less believable and seem overstated.

- *"I can acknowledge that it can cause some problems for those who are around it a significant part of the time, but 'fatal?'"* (older adult, Memphis)

- *"Secondhand smoke does cause damage, but 'fatal,' you're not really taking it in yourself, so I wouldn't really understand too much about it." (adolescent male susceptible, Baltimore)*
- *"I think it would, it's fatal depending on the circumstance, like if you have asthma or something, it could be fatal, but just generally, I don't, I don't think that's like true-ish." (adolescent male susceptible, Baltimore)*

Some participants noted that amount of exposure to secondhand smoke was an important factor, but that this was not reflected in this statement.

- *"I mean, if you're not around anyone who smokes, or you're around a lot of people that smoke very often, you know, maybe one puff gets blown in your face every three months, you know. I can't really see it doing too much damage." (adolescent male susceptible, Baltimore)*
- *"Like if you just say 'in nonsmokers,' well, anyone who doesn't smoke is a nonsmoker, right? But if you say 'nonsmokers that were exposed to secondhand smoke,' it's a little different." (younger adult, Memphis)*

Some adult participants stated that this statement was not relevant to them because when they smoked, they usually did not smoke around nonsmokers and therefore did not expose others to secondhand smoke.

- *"I usually smoke alone, too, so this doesn't really apply to me." (younger adult, Baltimore)*
- *"Yeah, because a lot of people are considerate smokers now. Like, we don't smoke in cars with kids." (older adult, Memphis)*
- *"I smoked normally outside, so I'm not like smoking in someone's face, you know, like I'm smoking in my own car, you know, with the windows down, but if I have a nonsmoker in the car, I don't smoke." (older adult, Portland)*

Some participants in older adult groups and the adolescent male smoker group thought the statement would be better if it said "may cause" or "is a cause of" rather than "causes."

- *"I think they need to change it to where it either says 'can cause lung disease' or 'may cause' because saying 'it causes it,' that means everybody that's around tobacco smoke eventually will die from lung disease, because not everybody's going to get, and we know that's not true... so when they say 'it causes it,' it can't, they can't prove that it causes it. It can only contribute to it...because you're making a positive statement here when we all know it's a gray area." (older adult, Portland)*

- *"[It's not believable] unless they've done studies over a long term, but I don't think it's a short-term." (older adult, Baltimore)*

A few participants also noted that because there is treatment for sexual dysfunction, this statement and health issue is not as scary as others.

- *"Even if this is true, even if this was 100% true, they have a fix for that, and it's a little pill form. I mean, I'm just saying, I mean, I'll notice that, like if you want to smoke a cigarette and you want to be sexual, you know there's a pill." (older adult, Memphis)*
- *"Just in case, there's always Cialis." (older adult, Baltimore)*

Worksheet	Adult	Adolescent
New information	68.4%	83.3%
Top 3 attention-grabbing	47.4%	94.4%

3.3.9.2 Smoking Causes Gangrene, Buerger's Disease, and Diabetes, Which Can Lead to Amputation of Limbs

Lists	Segments
<ul style="list-style-type: none"> ▪ Adult B ▪ Adolescent B 	<ul style="list-style-type: none"> ▪ 2 older adult groups; 2 younger adult groups ▪ Adolescent female susceptible; adolescent female smoker

None of the participants in any segment were able to accurately define Buerger's disease. Only a few participants had heard of it.

- *"I don't know what it is. I've heard of it, but I don't know. I know gangrene and I know diabetes but I don't know Buerger's disease." (older adult, Baltimore)*
- *"Buerger's disease, what is that?" (younger adult, Baltimore)*
- *"I don't know what the first two are." (adolescent female susceptible, Portland)*

Some participants had not heard before that diabetes and gangrene are related to smoking. In some groups, participants did not understand how gangrene could be related to smoking.

- *"What does, I'm just curious, what the heck would gangrene have to do with cigarettes?" (older adult, Portland)*
- *"Gangrene is a little extreme." (older adult, Portland)*

One participant pointed out that “they’re all related...I’m not sure they’re all related to smoking.”

Many participants did not think the statement was believable. For some, the statement was not believable because they had never heard it before.

- *“I don’t know of anybody that’s gotten gangrene from smoking.” (older adult, Baltimore)*
- *“Or diabetes from smoking, I’ve never heard that.” (older adult, Baltimore)*
- *“I think it, I don’t understand how smoking has to do with any of that.” (adolescent female susceptible, Portland)*
- *“Like we were talking about the cancer thing, like, so many people will already have diabetes who don’t smoke, it doesn’t really make an impact because it’s like, ‘well, I have a family history of diabetes, even if I don’t smoke, I’ll probably get it.’” (adolescent female susceptible, Portland)*

Other participants were confused about the association between diabetes or gangrene and smoking because they knew each to be caused by other things than smoking.

- *“I don’t know what it would take. I mean, if you have diabetes, I know that it makes it worse. I guess it can lead to it. I mean, but it’s not the number one cause of it. I know that.” (younger adult, Memphis)*
- *“My dad died of diabetes, and he never smoked, so I don’t believe it, either.” (younger adult, Memphis)*

Worksheet	Adult	Adolescent
New information	93.5%	90.5%
Top 3 attention-grabbing	71.0%	76.2%

3.3.9.3 Smoking Causes Diabetes

Lists	Segments
▪ Adult C	▪ 2 older adult groups; 2 younger adult groups
▪ Adolescent A	▪ Adolescent male susceptible; adolescent male smoker

Many participants had not heard before that smoking causes diabetes, and many did not think this statement was believable.

- *"I never heard that." (younger adult, Memphis)*
- *"I don't believe this one." (younger adult, Baltimore)*

Some participants did not think the statement was believable because they had never heard it and had not seen proof. Some participants pointed out that diabetes is caused by other things besides smoking and that this statement seemed to contradict other information they knew about diabetes.

- *"I have [heard this before], but I know there's a lot more causes of diabetes other than smoking, and I know not every smoker contracts diabetes, so even though, you know, rewording it might be, might make it more believable." (older adult, Memphis)*
- *"Like both my, my parents and my grandparents, they both have diabetes. I smoke. They don't even smoke. I smoke and I don't have diabetes." (younger adult, Memphis)*
- *"Children get it all the time... pregnant women get it all the time." (younger adult, Memphis)*
- *"Being overweight causes diabetes." (older adult, Portland)*
- *"Just hearing the other causes of diabetes, usually from too many sweets or genetics, so smoking, it just doesn't seem believable." (adolescent male susceptible, Baltimore)*

Some participants wanted to know *how*, or through what mechanism, diabetes is caused by smoking.

- *"Yeah, I need more information and on, you know, how smoking could exactly cause that." (younger adult, Baltimore)*
- *"If it would be like me being, like the third one, like where it actually breaks it down and tells you how it's causing this, maybe then it'd be believable. It tells you how it's happening." (younger adult, Baltimore)*

One participant thought the connection between smoking and diabetes could be related to circulation and blood flow to the pancreas, but was not sure.

- *"If you stop circulation to a pancreas, it can stop functioning, as well, and that's the only thing I can think of, blood restriction to your pancreas." (older adult, Portland)*

Some participants thought the statement would be more believable if it said "may cause" or "might be a contributing factor."

- *"It needs to say 'may cause.'" (younger adult, Memphis)*

Worksheet	Adult	Adolescent
New information	94.7%	77.8%
Top 3 attention-grabbing	52.6%	66.7%

3.3.9.4 Smoking Causes Blindness

Lists	Segments
<ul style="list-style-type: none"> Adult C Adolescent B 	<ul style="list-style-type: none"> 2 older adult groups; 2 younger adult groups Adolescent female susceptible; adolescent female smoker

Most participants had not heard that smoking causes blindness, and many were unsure about whether to believe the statement.

- *"Because you hear, you know, like we know the facts of how, like, cigarettes can cause cancer and, like, what the cancers it can cause, but you don't hear about it causing blindness, like most, more, most of the population has to wear glasses or contacts and are considered blind, like that's not, it's not going to register with you that smoking can cause it." (adolescent female susceptible, Portland)*
- *"Right, I'd like to know how it causes, I'm not saying I don't believe either of them, but I don't believe them yet because I haven't, there's no evidence." (younger adult, Baltimore)*

Some participants did not believe the statement and thought it was an exaggeration.

- *"It almost sounds too extreme." (adolescent female susceptible, Portland)*
- *"Like it's such a large leap from doing this to, 'I can't see,' that it seems almost unrealistic." (adolescent female susceptible, Portland)*

Some participants said they would believe the statement if it was less absolute and used "may cause" or "can cause."

- *"And we're back to the same thing of stating 'it causes it.' No, it doesn't cause it. It may contribute to it. It may affect it but it doesn't flat out cause it." (older adult, Portland)*
- *"Honestly, if they have the same issue with every one that comes up, it's too absolute. It doesn't list smoking as one of the factors or a contributing factor a risk factor—it's too absolute and too simplistic." (older adult, Memphis)*

cigarettes or secondhand smoke was related to the health effect being presented. Participants had positive reactions to aspects of statements that showed a mechanism of effect. When presented with a relatively general statement, especially if the statement indicated direct causality (X causes Y), participants often stated that they wanted to have statistics or some other kind of evidence for the effect. In general, providing more details seems likely to increase participants' perception that a statement is true, particularly for those statements that have to do with health effects that are not related to the lungs, such as bladder cancer, blindness, and sexual dysfunction.

The most prevalent finding across groups and statements was the negative reaction to statements of the type "X causes Y" (e.g. "cigarettes cause," "smoking causes," "tobacco smoke causes," or "secondhand smoke causes" ... [specific disease / health effect]). Participants referred to these statements as "blanket," "absolute" or "definitive" statements. Participants often reasoned that these statements are not true because 1) other factors could also lead to the disease or health effect; and 2) participants have observed that not all smokers experience the disease or health effect. Participants often took personal experiences and anecdotal information into account when deciding whether they believed a statement. If their experience differed from their perception of the statement's meaning, they often disbelieved the whole statement. Usually, participants suggested using "can cause," "may cause," or "increases the risk of" instead of "cause" or "causes." In some FGs, at the request of FDA, the moderator probed for the acceptability of the wording "is a cause of," which was also preferred over "cause" or "causes." The challenge of concisely communicating population level risk information to individual consumers in a way that they will understand was highlighted by these FGs.

Related to the negative reaction to "X causes Y" statements, participants also expressed a desire for more information about the relationship between the amount and duration of smoking to the health effects. This is consistent with findings from the discussions about health effects of smoking that took place before participants viewed the specific statements. Participants believed that the likelihood of experiencing health effects from smoking depends on how much or how often people smoke, how long they have smoked and whether they quit. Participants also indicated that effects of secondhand smoke are related to how much smoke is inhaled. If statements do not take amount or duration of exposure into account, participants seem to be more likely to discount the statements.

Additional consumer education might also be needed with regard to the positive effects of quitting vs. the permanent effects of smoking on the body. Participants perceived contradictions between the mention of permanent health effects and the information they have seen and heard on commercials and in publications that discuss the benefits of quitting, as well as the statements that refer to the positive effects of quitting.

4.2 Limitations

As with all qualitative methods of research, it should be noted that results are not generalizable and therefore cannot be extended to wider populations. However, RTI took care to include a cross-section of participants from multiple racial groups, various ages and educational levels, and both genders.